



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,353	06/26/2003	Chang Ho No	3811-0121P	3261
2292	7590	09/30/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			TALBOT, BRIAN K	
			ART UNIT	PAPER NUMBER
			1762	
DATE MAILED: 09/30/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,353

Applicant(s)

NO ET AL.

Examiner

Brian K. Talbot

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-12 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1762

1. The amendment filed 8/26/05 has been considered and entered. Claim 1 has been canceled. Claim 12 has been added. Claims 2-12 remain in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. This application contains claims 10 and 11 drawn to an invention nonelected with traverse in Paper filed 5/26/05. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
4. In response to Applicant's request, the drawings and foreign priority have been acknowledged on the PTO-326 form.
5. In light of the amendment filed 8/26/05, the 35 USC 112 first paragraph rejections has been withdrawn, but a new rejection has been necessitated by the amendment. The following 35 USC 112 second paragraph rejections and 35 USC 102 rejections are withdrawn.

Claim Rejections - 35 USC § 112

6. The amendment filed 8/26/05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the

Art Unit: 1762

original disclosure is as follows: The recitation of "metallic compound" in place of "organometallic compound" is new matter.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claims 2-9 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. (see above).

Claim Rejections - 35 USC § 103

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 or 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5,989,653) in combination with Clarke et al. (4,869,930).

Chen et al. (5,989,653) teaches a process for metallization of a substrate by irradiative curing of a catalyst applied thereto. A catalyst solution is applied to a substrate. Metallic clusters are formed by irradiating the substrate. Electroless plating can then deposit on the metallic clusters. Additionally electrolytic coating can follow the electroless plating step (abstract). A mask can be used for selective exposure of the catalytic solution (col. 3, lines 5-20). The catalyst solution can be applied in a variety of ways including ink-jet printing (col. 4, lines 35-50).

Chen et al. (5,989,653) fails to teach reducing or oxidizing to form the metal pattern.

Clarke et al. (4,869,930) teaches a method of preparing substrates for deposition of metal seed from organometallic vapor for subsequent electroless metallization. Clarke et al. (4,869,930) teaches applying an organometallic compound which includes M – metal, L-ligands and X- anions to a substrate. The organometallic material is physically, chemically or by other means decomposed to form a seed metal. The decomposing means includes heating, oxygen atmosphere, irradiation, etc (col. 7, lines 5-65). Electroless deposition is followed to form the metal layer.

Therefore it would have been obvious for one skilled in the art to have modified Chen et al. (5,989,653) process by incorporating a treating step in reducing or oxidizing atmosphere as evidenced by Clarke et al. (4,869,930) with the expectation of achieving similar success.

Chen et al. (5,989,653) in combination with Clarke et al. (4,869,930) fail to teach “growing crystals”,

The references teach electroless and electroplating the metal film to form the pattern. Hence, it is the Examiner’s position that the “growing crystals” would be inherent as the

Art Unit: 1762

processes are the same and one would expect similar growth patterns to be obtained.

Claims 2-5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBM Technical Disclosure Bulletin, Nov. 1989 or Hill et al. (5,534,312) in combination with Chen et al. (5,989,653).

IBM Technical Disclosure Bulletin, Nov. 1989 teaches a method of forming wiring patterns and vias on a substrate. A thin uniform layer of an organo-metallic is deposited as a powder on the surface of the substrate. The desired wiring pattern is then developed in the powder layer by selective application of heat, a laser, and the organo-metallic will decompose only where heat is applied forming adherent pattern of metal on the substrate. The unexposed organo-metallic layer is removed. The selective thermal decomposition is performed with a mask.

Hill et al. (5,534,312) teaches a method of directly depositing metal containing patterned films. A metal complex is applied to a substrate, irradiated with light through a mask to form a selective area (abstract, Fig. 1, col. 3, line 55 – col. 6, line 65)

IBM Technical Disclosure Bulletin, Nov. 1989 or Hill et al. (5,534,312) fail to teach electrolessly coating the metal layer.

Features described above concerning with Chen et al. (5,989,653) are incorporated here.

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified with IBM Technical Disclosure Bulletin, Nov. 1989 or Hill et al. (5,534,312) process by performing a subsequent electroless plating step atop the formed metal

Art Unit: 1762

layer as evidenced by Chen et al. (5,989,653) with the expectation of achieving a similar success as well as a desired thickness of the metal layer.

Claims 5-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBM Technical Disclosure Bulletin, Nov. 1989 in combination with Chen et al. (5,989,653) further in combination with Clarke et al. (4,869,930).

IBM Technical Disclosure Bulletin, Nov. 1989 in combination with Chen et al. (5,989,653) fail to teach the claimed compositional make-up of the organo-metallic compound.

Clarke et al. (4,869,930) teaches a method of preparing substrates for deposition of metal seed from organometallic vapor for subsequent electroless metallization. Clarke et al. (4,869,930) teaches an organometallic compound which includes M – metal, L-ligands and X-anions. The materials are detailed in col. 5, line 45 – col. 8, line 30).

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified IBM Technical Disclosure Bulletin, Nov. 1989 in combination with Chen et al. (5,989,653) process by utilizing the precursors of Clarke et al. (4,869,930) with the expectation of achieving similar success.

Response to Amendment

8. Applicant's arguments filed 8/26/05 have been fully considered but they are moot in view of the new rejection.

Art Unit: 1762

Applicant argued that there would be no burden for the examiner to search both groups as the likelihood of the search should be in both classes and the advantage of computer searching to avoid duplicates.

The Examiner disagrees. The traversal is on the ground(s) that the searches for the different Groups overlap and therefore there wouldn't be a serious burden on the Examiner and the Office. This is not found persuasive because the claims are directed toward distinct inventions that have acquired a separate status in the art as well as the fact that the issues that arise in examining product claims and method claims are different and this would constitute a burden on the Patent Office.

The requirement is still deemed proper and is therefore made FINAL.

Applicant argued that Chen et al. (5,989,653) uses a catalyst ions whereby the instant claims recite a metallic compound.

The Examiner agrees. However, as argued and recited in claim 5, the now amended claim 5, recites that the metallic compound can be a catalyst metal, i.e palladium and ions. Hence, the reference meets the claimed invention as both scenarios there is no ligands present.

Applicant argued that the prior art fails to teach "growing crystal using electro or electroless plating".

The Examiner agrees in part. While the references fail to state "growing crystals", the references teach electroless and electroplating the metal film to form the pattern. Hence, it is the Examiner's position that the "growing crystals" would be inherent as the processes are similar and one would expect similar growth patterns.

Applicant argued that Clarke et al. (4,869,930) teaches CVD of organometallic film as the instant claims do not.

The claims are not commensurate in scope with this argument. The claims are not limited as such as the claims recite "coating" which is inclusive of CVD and other coating processes.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

Art Unit: 1762

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B-K Talbot 9/28/05

Brian K Talbot
Primary Examiner
Art Unit 1762

BKT